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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re continuation application of: JASON K. SHIEPE ET AL.

FOR: METHOD AND APPARATUS FOR MAINTAINING )
COMPRESSION OF THE ACTIVE AREA IN AN )
ELECTROCHEMICAL CELL )

REQUEST FOR INTERFERENCE UNDER 37 C.F.R. § 1.604

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicants request that an interference be declared between the above-captioned application filed concurrently herewith and application Serial No. 09/827,368 filed on April 5, 2001 of LACONTL, Anthony, B.; TITTERINGTON, William, A.; SWETTE, Larry, L.; and LEON, Ricardo. Claims of other continuing applications of Serial No. 09/827,368 claiming benefit to this April 5, 2001 filing date should be considered in view of the proposed counts. The proposed counts of the interference are:

**COUNT I**

An electrochemical cell comprising:

a proton exchange membrane, said proton exchange membrane having a first face and a second face;

an anode, said anode having an inner face and an outer face, said inner face of said anode being positioned along said first face of said proton exchange membrane and being electrically coupled thereto;

a cathode, said cathode having an inner face and an outer face, said inner face of said cathode being positioned along said second face of said proton exchange membrane and being electrically coupled thereto;

a metal screen for defining a first fluid cavity, said metal screen having an inner face and an outer face, said inner face of said metal screen being placed in contact with said outer face of said anode;

a compression pad for defining a second fluid cavity, said compression pad being electrically-conductive, spring-like and porous and having an inner face and an outer face, said inner face being placed in contact with said outer face of said cathode;

means for axially containing fluid present within said metal screen and said compression pad; and

means for peripherally containing fluid present within said metal screen and said compression pad.

Claim 1 of U.S. Patent Application Serial No. 09/827,368 (Publication No. 20020144898) and claim 1 of the instant application correspond to proposed Count I.

The terms of the application claim 1 corresponding to proposed Count I are supported in Applicants' specification as follows:

| Terms in Claim | Supporting Language in Specification |
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| 1. An electrochemical cell comprising: | |
| (a) a proton exchange membrane, said proton exchange membrane having a first face and a second face; | Membrane 702 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Membrane 602 is a proton exchange membrane as evidenced by the examples provided, see p. 21, l. 18 - p. 23, l. 10, whereby membrane 702 is also a proton exchange membrane. Membrane 702 has a first face and a second face, see Figure 7. |
| (b) an anode, said anode having an inner face and an outer face, said inner face of said anode being positioned along said first face of said proton exchange membrane and being electrically coupled thereto; | First electrode 704 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. |

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| | 26, l. 19 - 21). Electrode 604 "corresponds to the oxygen electrode described above with respect to Figure 1", see p. 20, l. 4 - 5, which is the anode, see p. 1, l. 17, whereby electrode 704 is the anode. First electrode 704 has an inner face and an outer face, see Figure 7, with the inner face positioned along the first face of the membrane 702. |
| (c) a cathode, said cathode having an inner face and an outer face, said inner face of said cathode being positioned along said second face of said proton exchange membrane and being electrically coupled thereto; | Second electrode 706 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 606 "corresponds to the hydrogen electrode described above with respect to Figure 1", see p. 20, l. 7 - 8, which is the cathode, see p. 1, l. 18, whereby electrode 706 is the cathode. Second electrode 706 has an inner face and an outer face, see Figure 7, with the inner face positioned along the second face of the membrane 702. |
| (d) a metal screen for defining a first fluid cavity, said metal screen having an inner face and an outer face, said inner face of said metal screen being placed in contact with said outer face of said anode; | Member 718 in flow field 710 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Member 618 may be screen packs with the screens "composed of layers of perforated sheets or a woven mesh formed from metal", see (Figure 6) p. 23, l. 17 - 21. Member 718 has an inner face and an outer face, see Figure 7, with the inner face placed in contact with the outer face of the first electrode 704 (the anode). |
| (e) a compression pad for defining a second fluid cavity, said compression pad being electrically-conductive, spring-like and porous and having an inner face and an outer face, said inner face being placed in contact with said outer face of said cathode; | Pressure pad 742 "is generally of the same material and configuration as pressure pad 640 described above with respect to Figure 6", see p. 27, l. 6 - 8. "[P]ressure pad 742 serves not only as the means for ensuring the positive contact of the cell components, but also as the primary means of membrane support", see |

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| | p. 27, l. 8 - 10). "Pressure pad 640 is formed of an integral mixture of electrically conductive material and polymeric material. The electrically conductive material should be electrically conductive, and is preferably inert, in order to prevent degradation of the pad from exposure to the system fluids, and to prevent contamination of the system fluids by the electrically conductive material. Suitable electrically conductive materials include but are not limited to niobium; zirconium; tantalum; titanium; steels; such as stainless steel; nickel; cobalt; carbon; precious metals such as platinum and gold; and mixtures and alloys comprising at least one of the foregoing electrically conductive materials. The polymeric material should be elastomeric, in order to provide intimate and even contact between the flow fields and cell electrodes during compression. Especially where pressure pad 640 is used directly in flow field 620 (as illustrated in Figure 6), the polymeric material should be inert to the environment of the cell to prevent degradation from exposure to the system fluids, and to prevent contamination of the system fluids by the polymeric material." See p. 24, l. 5 - 18. Pressure pad 742 has an inner face and an outer face, see Figure 7, with the inner face placed in contact with the outer face of the membrane 702. |
| (f) means for axially containing fluid present within said metal screen and said compression pad; and | Cell separator plates 712 and 732 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, axially fluid |

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| | is contained in the flow fields by the cell separator plates 712 and 732, see Figure 7. |
| (g) means for peripherally containing fluid present within said metal screen and said compression pad. | Frames 714 and 724 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, peripherally fluid is contained in the flow fields by the frames 714 and 724, see Figure 7. |

**COUNT II**

An electrochemical cell comprising:

a proton exchange membrane, said proton exchange membrane having a first face and a second face;

an anode, said anode having an inner face and an outer face, said inner face of said anode being positioned along said first face of said proton exchange membrane and being electrically coupled thereto;

a cathode, said cathode having an inner face and an outer face, said inner face of said cathode being positioned along said second face of said proton exchange membrane and being electrically coupled thereto;

a metal screen for defining a first fluid cavity, said metal screen having an inner face and an outer face, said inner face of said metal screen being placed in contact with said outer face of said anode;

a compression pad for defining a second fluid cavity, said compression pad being electrically-conductive, spring-like and porous and having an inner face and an outer face, said inner face being placed in contact with said outer face of said cathode;

means for axially containing fluid present within said metal screen and said compression pad;

means for peripherally containing fluid present within said metal screen and said compression pad; and

wherein said compression pad includes carbon.

Claims 1 and 2 of U.S. Patent Application Serial No. 09/827,368 (Publication No. 20020144898) and claims 1 and 2 of the instant application substantially correspond to proposed Count II.

The terms of the application claims 1 and 2 corresponding to proposed Count II are supported in Applicants' specification as follows:

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| 1. An electrochemical cell comprising: | |
| (a) a proton exchange membrane, said proton exchange membrane having a first face and a second face; | Membrane 702 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Membrane 602 is a proton exchange membrane as evidenced by the examples provided, see p. 21, l. 18 - p. 23, l. 10, whereby membrane 702 is also a proton exchange membrane. Membrane 702 has a first face and a second face, see Figure 7. |
| (b) an anode, said anode having an inner face and an outer face, said inner face of said anode being positioned along said first face of said proton exchange membrane and being electrically coupled thereto; | First electrode 704 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 604 "corresponds to the oxygen electrode described above with respect to Figure 1", see p. 20, l. 4 - 5, |

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| | which is the anode, see p. 1, l. 17, whereby electrode 704 is the anode. First electrode 704 has an inner face and an outer face, see Figure 7, with the inner face positioned along the first face of the membrane 702. |
| (c) a cathode, said cathode having an inner face and an outer face, said inner face of said cathode being positioned along said second face of said proton exchange membrane and being electrically coupled thereto; | Second electrode 706 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 606 "corresponds to the hydrogen electrode described above with respect to Figure 1", see p. 20, l. 7 - 8, which is the cathode, see p. 1, l. 18, whereby electrode 706 is the cathode. Second electrode 706 has an inner face and an outer face, see Figure 7, with the inner face positioned along the second face of the membrane 702. |
| (d) a metal screen for defining a first fluid cavity, said metal screen having an inner face and an outer face, said inner face of said metal screen being placed in contact with said outer face of said anode; | Member 718 in flow field 710 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Member 618 may be screen packs with the screens "composed of layers of perforated sheets or a woven mesh formed from metal", see (Figure 6) p. 23, l. 17 - 21. Member 718 has an inner face and an outer face, see Figure 7, with the inner face placed in contact with the outer face of the first electrode 704 (the anode). |
| (e) a compression pad for defining a second fluid cavity, said compression pad being electrically-conductive, spring-like and porous and having an inner face and an outer face, said inner face being placed in contact with said outer face of said cathode; | Pressure pad 742 "is generally of the same material and configuration as pressure pad 640 described above with respect to Figure 6", see p. 27, l. 6 - 8. "[P]ressure pad 742 serves not only as the means for ensuring the positive contact of the cell components, but also as the primary means of membrane support", see p. 27, l. 8 - 10). "Pressure pad 640 is formed of an integral mixture of electrically conductive material and |

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| | polymeric material. The electrically conductive material should be electrically conductive, and is preferably inert, in order to prevent degradation of the pad from exposure to the system fluids, and to prevent contamination of the system fluids by the electrically conductive material. Suitable electrically conductive materials include but are not limited to niobium; zirconium; tantalum; titanium; steels; such as stainless steel; nickel; cobalt; carbon; precious metals such as platinum and gold; and mixtures and alloys comprising at least one of the foregoing electrically conductive materials. The polymeric material should be elastomeric, in order to provide intimate and even contact between the flow fields and cell electrodes during compression. Especially where pressure pad 640 is used directly in flow field 620 (as illustrated in Figure 6), the polymeric material should be inert to the environment of the cell to prevent degradation from exposure to the system fluids, and to prevent contamination of the system fluids by the polymeric material." See p. 24, l. 5 - 18. Pressure pad 742 has an inner face and an outer face, see Figure 7, with the inner face placed in contact with the outer face of the membrane 702. |
| (f) means for axially containing fluid present within said metal screen and said compression pad; and | Cell separator plates 712 and 732 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, axially fluid is contained in the flow fields by the cell separator plates 712 and 732, see Figure 7. |

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| (g) means for peripherally containing fluid present within said metal screen and said compression pad. | Frames 714 and 724 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, peripherally fluid is contained in the flow fields by the frames 714 and 724, see Figure 7. |
| 2. The electrochemical cell as claimed in claim 1 wherein said compression pad includes carbon. | Pressure pad 742 "is generally of the same material and configuration as pressure pad 640 described above with respect to Figure 6", see p. 27, l. 6 - 8. "Pressure pad 640 is formed of an integral mixture of electrically conductive material... Suitable electrically conductive materials include ... carbon ", see p. 24, l. 5 - 11. |

**COUNT III**

An electrochemical cell comprising:

a proton exchange membrane, said proton exchange membrane having a first face and a second face;

an anode, said anode having an inner face and an outer face, said inner face of said anode being positioned along said first face of said proton exchange membrane and being electrically coupled thereto;

a cathode, said cathode having an inner face and an outer face, said inner face of said cathode being positioned along said second face of said proton exchange membrane and being electrically coupled thereto;

a metal screen for defining a first fluid cavity, said metal screen having an inner face and an outer face, said inner face of said metal screen being placed in contact with said outer face of said anode;

a compression pad for defining a second fluid cavity, said compression pad being electrically-conductive, spring-like and porous and having an inner face and an outer face, said inner face being placed in contact with said outer face of said cathode;

means for axially containing fluid present within said metal screen and said compression pad;

means for peripherally containing fluid present within said metal screen and said compression pad; and

wherein said compression pad has a thickness of about 0.005 inch - about 1 inch.

Claims 1 and 6 of U.S. Patent Application Serial No. 09/827,368 (Publication No. 20020144898) and claims 1 and 3 of the instant application substantially correspond to proposed Count III.

The terms of the application claims 1 and 3 corresponding to proposed Count III are supported in Applicants' specification as follows:

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| 1. An electrochemical cell comprising:<br>(a) a proton exchange membrane, said proton exchange membrane having a first face and a second face; | Membrane 702 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Membrane 602 is a proton exchange membrane as evidenced by the examples provided, see p. 21, l. 18 - p. 23, l. 10, whereby membrane 702 is also a proton exchange membrane. Membrane 702 has a first face and a second face, see Figure 7. |
| (b) an anode, said anode having an inner face and an outer face, said inner face of said anode being positioned along said first face of said proton exchange | First electrode 704 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to |

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| membrane and being electrically coupled thereto; | similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 604 "corresponds to the oxygen electrode described above with respect to Figure 1", see p. 20, l. 4 - 5, which is the anode, see p. 1, l. 17, whereby electrode 704 is the anode. First electrode 704 has an inner face and an outer face, see Figure 7, with the inner face positioned along the first face of the membrane 702. |
| (c) a cathode, said cathode having an inner face and an outer face, said inner face of said cathode being positioned along said second face of said proton exchange membrane and being electrically coupled thereto; | Second electrode 706 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 606 "corresponds to the hydrogen electrode described above with respect to Figure 1", see p. 20, l. 7 - 8, which is the cathode, see p. 1, l. 18, whereby electrode 706 is the cathode. Second electrode 706 has an inner face and an outer face, see Figure 7, with the inner face positioned along the second face of the membrane 702. |
| (d) a metal screen for defining a first fluid cavity, said metal screen having an inner face and an outer face, said inner face of said metal screen being placed in contact with said outer face of said anode; | Member 718 in flow field 710 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Member 618 may be screen packs with the screens "composed of layers of perforated sheets or a woven mesh formed from metal", see (Figure 6) p. 23, l. 17 - 21. Member 718 has an inner face and an outer face, see Figure 7, with the inner face placed in contact with the outer face of the first electrode 704 (the anode). |
| (e) a compression pad for defining a second fluid cavity, said compression pad being electrically-conductive, spring-like and porous and having an inner face and an outer face, said inner face being placed in contact with said outer face of said | Pressure pad 742 "is generally of the same material and configuration as pressure pad 640 described above with respect to Figure 6", see p. 27, l. 6 - 8. "[P]ressure pad 742 serves not only as the means for ensuring the positive contact of |

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| cathode; | the cell components, but also as the primary means of membrane support", see p. 27, l. 8 - 10). "Pressure pad 640 is formed of an integral mixture of electrically conductive material and polymeric material. The electrically conductive material should be electrically conductive, and is preferably inert, in order to prevent degradation of the pad from exposure to the system fluids, and to prevent contamination of the system fluids by the electrically conductive material. Suitable electrically conductive materials include but are not limited to niobium; zirconium; tantalum; titanium; steels; such as stainless steel; nickel; cobalt; carbon; precious metals such as platinum and gold; and mixtures and alloys comprising at least one of the foregoing electrically conductive materials. The polymeric material should be elastomeric, in order to provide intimate and even contact between the flow fields and cell electrodes during compression. Especially where pressure pad 640 is used directly in flow field 620 (as illustrated in Figure 6), the polymeric material should be inert to the environment of the cell to prevent degradation from exposure to the system fluids, and to prevent contamination of the system fluids by the polymeric material." See p. 24, l. 5 - 18. Pressure pad 742 has an inner face and an outer face, see Figure 7, with the inner face placed in contact with the outer face of the membrane 702. |
| (f) means for axially containing fluid present within said metal screen and said compression pad; and | Cell separator plates 712 and 732 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a |

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| | cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, axially fluid is contained in the flow fields by the cell separator plates 712 and 732, see Figure 7. |
| (g) means for peripherally containing fluid present within said metal screen and said compression pad. | Frames 714 and 724 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, peripherally fluid is contained in the flow fields by the frames 714 and 724, see Figure 7. |
| 3. The electrochemical cell as claimed in claim 1 wherein said compression pad has a thickness of about 0.005 inch - about 1 inch. | Pressure pad 742 "is generally of the same material and configuration as pressure pad 640 described above with respect to Figure 6", see p. 27, l. 6 - 8. "[P]ressure pad 640... to a thickness of between 0.0005 to about 1 inch"... see p. 25, l. 21 - 22. |

**COUNT IV**

An electrochemical cell comprising:

a proton exchange membrane, said proton exchange membrane having a first face and a second face;

an anode, said anode having an inner face and an outer face, said inner face of said anode being positioned along said first face of said proton exchange membrane and being electrically coupled thereto;

a cathode, said cathode having an inner face and an outer face, said inner face of said cathode being positioned along said second face of said proton exchange membrane and being electrically coupled thereto;

a metal screen for defining a first fluid cavity, said metal screen having an inner face and an outer face, said inner face of said metal screen being placed in contact with said outer face of said anode;

a compression pad for defining a second fluid cavity, said compression pad being electrically-conductive, spring-like and porous and having an inner face and an outer face, said inner face being placed in contact with said outer face of said cathode;

means for axially containing fluid present within said metal screen and said compression pad;

means for peripherally containing fluid present within said metal screen and said compression pad; and

wherein said axially containing means comprises a first separator placed in contact with said outer face of said metal screen and a second separator placed in contact with said outer face of said compression pad.

Claims 1 and 10 of U.S. Patent Application Serial No. 09/827,368 (Publication No. 20020144898) and claims 1 and 4 of the instant application correspond to proposed Count IV.

The terms of the application claims 1 and 4 corresponding to proposed Count IV are supported in Applicants' specification as follows:

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| 1. An electrochemical cell comprising: | |
| (a) a proton exchange membrane, said proton exchange membrane having a first face and a second face; | Membrane 702 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Membrane 602 is a proton exchange membrane as evidenced by the examples provided, see p. 21, l. 18 - p. 23, l. 10, whereby membrane 702 is also a proton exchange membrane. Membrane 702 has a first face and a second face, see Figure 7. |
| (b) an anode, said anode having an inner face and an outer face, said inner face of said anode being positioned along said | First electrode 704 (where "alternate embodiments are also detailed, wherein similar elements are numbered in |

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| first face of said proton exchange membrane and being electrically coupled thereto; | increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 604 "corresponds to the oxygen electrode described above with respect to Figure 1", see p. 20, l. 4 - 5, which is the anode, see p. 1, l. 17, whereby electrode 704 is the anode. First electrode 704 has an inner face and an outer face, see Figure 7, with the inner face positioned along the first face of the membrane 702. |
| (c) a cathode, said cathode having an inner face and an outer face, said inner face of said cathode being positioned along said second face of said proton exchange membrane and being electrically coupled thereto; | Second electrode 706 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 606 "corresponds to the hydrogen electrode described above with respect to Figure 1", see p. 20, l. 7 - 8, which is the cathode, see p. 1, l. 18, whereby electrode 706 is the cathode. Second electrode 706 has an inner face and an outer face, see Figure 7, with the inner face positioned along the second face of the membrane 702. |
| (d) a metal screen for defining a first fluid cavity, said metal screen having an inner face and an outer face, said inner face of said metal screen being placed in contact with said outer face of said anode; | Member 718 in flow field 710 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Member 618 may be screen packs with the screens "composed of layers of perforated sheets or a woven mesh formed from metal", see (Figure 6) p. 23, l. 17 - 21. Member 718 has an inner face and an outer face, see Figure 7, with the inner face placed in contact with the outer face of the first electrode 704 (the anode). |
| (e) a compression pad for defining a second fluid cavity, said compression pad being electrically-conductive, spring-like and porous and having an inner face and an outer face, said inner face being placed in | Pressure pad 742 "is generally of the same material and configuration as pressure pad 640 described above with respect to Figure 6", see p. 27, l. 6 - 8. "[P]ressure pad 742 serves not only as the |

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| contact with said outer face of said cathode; | means for ensuring the positive contact of the cell components, but also as the primary means of membrane support", see p. 27, l. 8 - 10). "Pressure pad 640 is formed of an integral mixture of electrically conductive material and polymeric material. The electrically conductive material should be electrically conductive, and is preferably inert, in order to prevent degradation of the pad from exposure to the system fluids, and to prevent contamination of the system fluids by the electrically conductive material. Suitable electrically conductive materials include but are not limited to niobium; zirconium; tantalum; titanium; steels; such as stainless steel; nickel; cobalt; carbon; precious metals such as platinum and gold; and mixtures and alloys comprising at least one of the foregoing electrically conductive materials. The polymeric material should be elastomeric, in order to provide intimate and even contact between the flow fields and cell electrodes during compression. Especially where pressure pad 640 is used directly in flow field 620 (as illustrated in Figure 6), the polymeric material should be inert to the environment of the cell to prevent degradation from exposure to the system fluids, and to prevent contamination of the system fluids by the polymeric material." See p. 24, l. 5 - 18. Pressure pad 742 has an inner face and an outer face, see Figure 7, with the inner face placed in contact with the outer face of the membrane 702. |
| (f) means for axially containing fluid present within said metal screen and said compression pad; and | Cell separator plates 712 and 732 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally |

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| | by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, axially fluid is contained in the flow fields by the cell separator plates 712 and 732, see Figure 7. |
| (g) means for peripherally containing fluid present within said metal screen and said compression pad. | Frames 714 and 724 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, peripherally fluid is contained in the flow fields by the frames 714 and 724, see Figure 7. |
| 4. The electrochemical cell as claimed in claim 1 wherein said axially containing means comprises a first separator placed in contact with said outer face of said metal screen and a second separator placed in contact with said outer face of said compression pad. | Cell separator plates 712 and 732 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, axially fluid is contained in the flow fields by the cell separator plates 712 and 732, see Figure 7. Cell separator plate 712 is in contact with the outer face of member 718 (metal screen) and cell separator plate 732 is in contact with the outer face of pressure pad 742, see Figure 7. |

## COUNT V

An electrochemical cell comprising:

a proton exchange membrane, said proton exchange membrane having a first face and a second face;

an anode, said anode having an inner face and an outer face, said inner face of said anode being positioned along said first face of said proton exchange membrane and being electrically coupled thereto;

a cathode, said cathode having an inner face and an outer face, said inner face of said cathode being positioned along said second face of said proton exchange membrane and being electrically coupled thereto;

a metal screen for defining a first fluid cavity, said metal screen having an inner face and an outer face, said inner face of said metal screen being placed in contact with said outer face of said anode;

a compression pad for defining a second fluid cavity, said compression pad being electrically-conductive, spring-like and porous and having an inner face and an outer face, said inner face being placed in contact with said outer face of said cathode;

means for axially containing fluid present within said metal screen and said compression pad;

means for peripherally containing fluid present within said metal screen and said compression pad;

wherein said axially containing means comprises a first separator placed in contact with said outer face of said metal screen and a second separator placed in contact with said outer face of said compression pad; and

wherein each of said separators is electrically-conductive.

Claims 1, 10 and 11 of U.S. Patent Application Serial No. 09/827,368 (Publication No. 20020144898) and claims 1, 4 and 5 of the instant application substantially correspond to proposed Count V.

The terms of the application claims 1, 4 and 5 corresponding to proposed Count V are supported in Applicants' specification as follows:

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| 1. An electrochemical cell comprising:<br>(a) a proton exchange membrane, said proton exchange membrane having a first face and a second face; | Membrane 702 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Membrane 602 is a proton exchange membrane as evidenced by the examples provided, see p. 21, l. 18 - p. 23, l. 10, whereby membrane 702 is also a proton exchange membrane. Membrane 702 has a first face and a second face, see Figure 7. |
| (b) an anode, said anode having an inner face and an outer face, said inner face of said anode being positioned along said first face of said proton exchange membrane and being electrically coupled thereto; | First electrode 704 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 604 "corresponds to the oxygen electrode described above with respect to Figure 1", see p. 20, l. 4 - 5, which is the anode, see p. 1, l. 17, whereby electrode 704 is the anode. First electrode 704 has an inner face and an outer face, see Figure 7, with the inner face positioned along the first face of the membrane 702. |
| (c) a cathode, said cathode having an inner face and an outer face, said inner face of said cathode being positioned along said second face of said proton exchange membrane and being electrically coupled thereto; | Second electrode 706 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 606 "corresponds to the hydrogen electrode described above with respect to Figure 1", see p. 20, l. 7 - 8, which is the cathode, see p. 1, l. 18, whereby electrode 706 is the cathode. Second electrode 706 has an inner face and an outer face, see Figure 7, with the inner face positioned along the second face of the membrane 702. |
| (d) a metal screen for defining a | Member 718 in flow field 710 (where |

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| first fluid cavity, said metal screen having an inner face and an outer face, said inner face of said metal screen being placed in contact with said outer face of said anode; | "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Member 618 may be screen packs with the screens "composed of layers of perforated sheets or a woven mesh formed from metal", see (Figure 6) p. 23, l. 17 - 21. Member 718 has an inner face and an outer face, see Figure 7, with the inner face placed in contact with the outer face of the first electrode 704 (the anode). |
| (e) a compression pad for defining a second fluid cavity, said compression pad being electrically-conductive, spring-like and porous and having an inner face and an outer face, said inner face being placed in contact with said outer face of said cathode; | Pressure pad 742 "is generally of the same material and configuration as pressure pad 640 described above with respect to Figure 6", see p. 27, l. 6 - 8. "[P]ressure pad 742 serves not only as the means for ensuring the positive contact of the cell components, but also as the primary means of membrane support", see p. 27, l. 8 - 10). "Pressure pad 640 is formed of an integral mixture of electrically conductive material and polymeric material. The electrically conductive material should be electrically conductive, and is preferably inert, in order to prevent degradation of the pad from exposure to the system fluids, and to prevent contamination of the system fluids by the electrically conductive material. Suitable electrically conductive materials include but are not limited to niobium; zirconium; tantalum; titanium; steels; such as stainless steel; nickel; cobalt; carbon; precious metals such as platinum and gold; and mixtures and alloys comprising at least one of the foregoing electrically conductive materials. The polymeric material should be elastomeric, in order to provide intimate and even contact between the flow fields and cell electrodes during compression. Especially where pressure pad 640 is used directly in flow field 620 (as illustrated in Figure 6), the polymeric material should be inert to the environment of the cell to prevent degradation from exposure to the |

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| | system fluids, and to prevent contamination of the system fluids by the polymeric material." See p. 24, l. 5 - 18. Pressure pad 742 has an inner face and an outer face, see Figure 7, with the inner face placed in contact with the outer face of the membrane 702. |
| (f) means for axially containing fluid present within said metal screen and said compression pad; and | Cell separator plates 712 and 732 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, axially fluid is contained in the flow fields by the cell separator plates 712 and 732, see Figure 7. |
| (g) means for peripherally containing fluid present within said metal screen and said compression pad. | Frames 714 and 724 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, peripherally fluid is contained in the flow fields by the frames 714 and 724, see Figure 7. |
| 4. The electrochemical cell as claimed in claim 1 wherein said axially containing means comprises a first separator placed in contact with said outer face of said metal screen and a second separator placed in contact with said outer face of said compression pad. | Cell separator plates 712 and 732 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is |

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| | defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, axially fluid is contained in the flow fields by the cell separator plates 712 and 732, see Figure 7. Cell separator plate 712 is in contact with the outer face of member 718 (metal screen) and cell separator plate 732 is in contact with the outer face of pressure pad 742, see Figure 7. |
| 5. The electrochemical cell as claimed in claim 4 wherein each of said separators is electrically-conductive. | Cell separator plates 712 and 732 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "With the aid of pressure pad 640, electrical contact between second electrode 606 and member 628 on one side of pressure pad 640, and cell separator plate 632 on the other side of pressure pad 640, is maintained". See p. 26, l. 15 - 18. Since electrical contact is maintained to the cell separator plate, it is by definition electrically-conductive. |

**COUNT VI**

An electrochemical cell comprising:

a proton exchange membrane, said proton exchange membrane having a first face and a second face;

an anode, said anode having an inner face and an outer face, said inner face of said anode being positioned along said first face of said proton exchange membrane and being electrically coupled thereto;

a cathode, said cathode having an inner face and an outer face, said inner face of said cathode being positioned along said second face of said proton exchange membrane and being electrically coupled thereto;

a metal screen for defining a first fluid cavity, said metal screen having an inner face and an outer face, said inner face of said metal screen being placed in contact with said outer face of said anode;

a compression pad for defining a second fluid cavity, said compression pad being electrically-conductive, spring-like and porous and having an inner face and an outer face, said inner face being placed in contact with said outer face of said cathode;

means for axially containing fluid present within said metal screen and said compression pad;

(g) means for peripherally containing fluid present within said metal screen and said compression pad;

wherein said axially containing means comprises a first separator placed in contact with said outer face of said metal screen and a second separator placed in contact with said outer face of said compression pad; and

said electrochemical cell stack comprising two electrochemical cells, said two electrochemical cells being arranged in series in a bipolar configuration, with said first separator of one of said two electrochemical cells being in contact with said second separator of the other of said two electrochemical cells.

Claims 1, 10 and 13 of U.S. Patent Application Serial No. 09/827,368 (Publication No. 20020144898) and claims 1, 4 and 6 of the instant application substantially correspond to proposed Count VI.

The terms of the application claims 1, 4 and 6 corresponding to proposed Count VI are supported in Applicants' specification as follows:

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| 1. An electrochemical cell comprising:<br>(a) a proton exchange membrane, said proton exchange membrane having a first face and a second face; | Membrane 702 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments |

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| | described with reference to Figure 6", p. 26, l. 19 - 21). Membrane 602 is a proton exchange membrane as evidenced by the examples provided, see p. 21, l. 18 - p. 23, l. 10, whereby membrane 702 is also a proton exchange membrane. Membrane 702 has a first face and a second face, see Figure 7. |
| (b) an anode, said anode having an inner face and an outer face, said inner face of said anode being positioned along said first face of said proton exchange membrane and being electrically coupled thereto; | First electrode 704 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 604 "corresponds to the oxygen electrode described above with respect to Figure 1", see p. 20, l. 4 - 5, which is the anode, see p. 1, l. 17, whereby electrode 704 is the anode. First electrode 704 has an inner face and an outer face, see Figure 7, with the inner face positioned along the first face of the membrane 702. |
| (c) a cathode, said cathode having an inner face and an outer face, said inner face of said cathode being positioned along said second face of said proton exchange membrane and being electrically coupled thereto; | Second electrode 706 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 606 "corresponds to the hydrogen electrode described above with respect to Figure 1", see p. 20, l. 7 - 8, which is the cathode, see p. 1, l. 18, whereby electrode 706 is the cathode. Second electrode 706 has an inner face and an outer face, see Figure 7, with the inner face positioned along the second face of the membrane 702. |
| (d) a metal screen for defining a first fluid cavity, said metal screen having an inner face and an outer face, said inner face of said metal screen being placed in contact with said outer face of said anode; | Member 718 in flow field 710 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Member 618 may be screen packs with the screens "composed of layers |

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| | of perforated sheets or a woven mesh formed from metal", see (Figure 6) p. 21, l. 17 - 21. Member 718 has an inner face and an outer face, see Figure 7, with the inner face placed in contact with the outer face of the first electrode 704 (the anode). |
| (e) a compression pad for defining a second fluid cavity, said compression pad being electrically-conductive, spring-like and porous and having an inner face and an outer face, said inner face being placed in contact with said outer face of said cathode; | Pressure pad 742 "is generally of the same material and configuration as pressure pad 640 described above with respect to Figure 6", see p. 27, l. 6 - 8. "[P]ressure pad 742 serves not only as the means for ensuring the positive contact of the cell components, but also as the primary means of membrane support", see p. 27, l. 8 - 10). "Pressure pad 640 is formed of an integral mixture of electrically conductive material and polymeric material. The electrically conductive material should be electrically conductive, and is preferably inert, in order to prevent degradation of the pad from exposure to the system fluids, and to prevent contamination of the system fluids by the electrically conductive material. Suitable electrically conductive materials include but are not limited to niobium; zirconium; tantalum; titanium; steels; such as stainless steel; nickel; cobalt; carbon; precious metals such as platinum and gold; and mixtures and alloys comprising at least one of the foregoing electrically conductive materials. The polymeric material should be elastomeric, in order to provide intimate and even contact between the flow fields and cell electrodes during compression. Especially where pressure pad 640 is used directly in flow field 620 (as illustrated in Figure 6), the polymeric material should be inert to the environment of the cell to prevent degradation from exposure to the system fluids, and to prevent contamination of the system fluids by the polymeric material." See p. 24, l. 5 - 18. Pressure pad 742 has an inner face and an outer face, see Figure 7, with the inner face placed in contact with the outer face of the membrane 702. |

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| (f) means for axially containing fluid present within said metal screen and said compression pad; and | Cell separator plates 712 and 732 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, axially fluid is contained in the flow fields by the cell separator plates 712 and 732, see Figure 7. |
| (g) means for peripherally containing fluid present within said metal screen and said compression pad. | Frames 714 and 724 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, peripherally fluid is contained in the flow fields by the frames 714 and 724, see Figure 7. |
| 4. The electrochemical cell as claimed in claim 1 wherein said axially containing means comprises a first separator placed in contact with said outer face of said metal screen and a second separator placed in contact with said outer face of said compression pad | Cell separator plates 712 and 732 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, |

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| | axially fluid is contained in the flow fields by the cell separator plates 712 and 732, see Figure 7. Cell separator plate 712 is in contact with the outer face of member 718 (metal screen) and cell separator plate 732 is in contact with the outer face of pressure pad 742, see Figure 7. |
| 6. An electrochemical cell stack comprising two electrochemical cells as claimed in claim 4, said two electrochemical cells being arranged in series in a bipolar configuration, with said first separator of one of said two electrochemical cells being in contact with said second separator of the other of said two electrochemical cells. | Cell 700 where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21. "Cell 600 is typically one of a plurality of similar cells employed in a cell stack", see p. 20, l. 1 - 4. "The cells within the stack are sequentially arranged", see p. 3, l. 7 - 9. |

**COUNT VII**

An electrochemical cell comprising:

a proton exchange membrane, said proton exchange membrane having a first face and a second face;

an anode, said anode having an inner face and an outer face, said inner face of said anode being positioned along said first face of said proton exchange membrane and being electrically coupled thereto;

a cathode, said cathode having an inner face and an outer face, said inner face of said cathode being positioned along said second face of said proton exchange membrane and being electrically coupled thereto;

a metal screen for defining a first fluid cavity, said metal screen having an inner face and an outer face, said inner face of said metal screen being placed in contact with said outer face of said anode;

a compression pad for defining a second fluid cavity, said compression pad being electrically-conductive, spring-like and porous and having an inner face and an outer face, said inner face being placed in contact with said outer face of said cathode;

means for axially containing fluid present within said metal screen and said compression pad;

means for peripherally containing fluid present within said metal screen and said compression pad; and

wherein said compression pad comprises carbon and a polymeric or elastomeric material.

Claims 1 and 15 of U.S. Patent Application Serial No. 09/827,368 (Publication No. 20020144898) and claims 1 and 7 of the instant application substantially correspond to proposed Count VII.

The terms of the application claims 1 and 7 corresponding to proposed Count VII are supported in Applicants' specification as follows:

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| 1. An electrochemical cell comprising: | |
| (a) a proton exchange membrane, said proton exchange membrane having a first face and a second face; | Membrane 702 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Membrane 602 is a proton exchange membrane as evidenced by the examples provided, see p. 21, l. 18 - p. 23, l. 10, whereby membrane 702 is also a proton exchange membrane. Membrane 702 has a first face and a second face, see Figure 7. |
| (b) an anode, said anode having an inner face and an outer face, said inner face of said anode being positioned along said first face of said proton exchange membrane and being electrically coupled thereto; | First electrode 704 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 604 "corresponds to the oxygen electrode described above with respect to Figure 1", see p. 20, l. 4 - 5, which is the anode, see p. 1, l. 17, whereby electrode 704 is the anode. First electrode 704 has an inner face and an outer face, see Figure 7, with the inner face positioned along the first face of the membrane 702. |
| (c) a cathode, said cathode having | Second electrode 706 (where "alternate |

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| an inner face and an outer face, said inner face of said cathode being positioned along said second face of said proton exchange membrane and being electrically coupled thereto; | embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 606 "corresponds to the hydrogen electrode described above with respect to Figure 1", see p. 20, l. 7 - 8, which is the cathode, see p. 1, l. 18, whereby electrode 706 is the cathode. Second electrode 706 has an inner face and an outer face, see Figure 7, with the inner face positioned along the second face of the membrane 702. |
| (d) a metal screen for defining a first fluid cavity, said metal screen having an inner face and an outer face, said inner face of said metal screen being placed in contact with said outer face of said anode; | Member 718 in flow field 710 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Member 618 may be screen packs with the screens "composed of layers of perforated sheets or a woven mesh formed from metal", see (Figure 6) p. 23, l. 17 - 21. Member 718 has an inner face and an outer face, see Figure 7, with the inner face placed in contact with the outer face of the first electrode 704 (the anode). |
| (e) a compression pad for defining a second fluid cavity, said compression pad being electrically-conductive, spring-like and porous and having an inner face and an outer face, said inner face being placed in contact with said outer face of said cathode; | Pressure pad 742 "is generally of the same material and configuration as pressure pad 640 described above with respect to Figure 6", see p. 27, l. 6 - 8. "[P]ressure pad 742 serves not only as the means for ensuring the positive contact of the cell components, but also as the primary means of membrane support", see p. 27, l. 8 - 10). "Pressure pad 640 is formed of an integral mixture of electrically conductive material and polymeric material. The electrically conductive material should be electrically conductive, and is preferably inert, in order to prevent degradation of the pad from exposure to the system fluids, and to prevent contamination of the system fluids by the electrically conductive material. |

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| | Suitable electrically conductive materials include but are not limited to niobium; zirconium; tantalum; titanium; steels; such as stainless steel; nickel; cobalt; carbon; precious metals such as platinum and gold; and mixtures and alloys comprising at least one of the foregoing electrically conductive materials. The polymeric material should be elastomeric, in order to provide intimate and even contact between the flow fields and cell electrodes during compression. Especially where pressure pad 640 is used directly in flow field 620 (as illustrated in Figure 6), the polymeric material should be inert to the environment of the cell to prevent degradation from exposure to the system fluids, and to prevent contamination of the system fluids by the polymeric material." See p. 24, l. 5 - 18. Pressure pad 742 has an inner face and an outer face, see Figure 7, with the inner face placed in contact with the outer face of the membrane 702. |
| (f) means for axially containing fluid present within said metal screen and said compression pad; and | Cell separator plates 712 and 732 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, axially fluid is contained in the flow fields by the cell separator plates 712 and 732, see Figure 7. |
| (g) means for peripherally containing fluid present within said metal screen and said compression pad. | Frames 714 and 724 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is |

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| | defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, peripherally fluid is contained in the flow fields by the frames 714 and 724, see Figure 7. |
| 7. The electrochemical cell stack as claimed in claim 1 wherein said compression pad comprises carbon and a polymeric or elastomeric material. | Pressure pad 742 "is generally of the same material and configuration as pressure pad 640 described above with respect to Figure 6", see p. 27, l. 6 - 8. "Pressure pad 640 is formed of an integral mixture of electrically conductive material... Suitable electrically conductive materials include... carbon", see p. 24, l. 5 - 11. The polymeric material should be elastomeric, in order to provide intimate and even contact between the flow fields and cell electrodes during compression. See p. 24, l. 13 - 14. |

**COUNT VIII**

An electrochemical cell comprising:

first and second separators, said first and second separators being electrically conductive, being spaced apart from one another and being generally parallel to one another;

a proton exchange membrane disposed between said first and second separators;

an anode, said anode being positioned between said proton exchange membrane and said first separator and being electrically coupled to said proton exchange membrane;

a cathode, said cathode being positioned between said proton exchange membrane and said second separator and being electrically coupled to said proton exchange membrane;

a metal screen, said metal screen being positioned between said anode and said first separator and being electrically coupled to each of said anode and said first separator;

an electrically-conductive, spring-like, porous pad, said electrically-coupled, spring-like, porous pad being positioned between said cathode and said second separator and being electrically coupled to each of said cathode and said second separator;

a pair of cell frames, one of said cell frames being in peripheral contact with said metal screen, the other of said cell frames being in peripheral contact with said electrically-conductive, spring-like, porous pad.

Claim 16 of U.S. Patent Application Serial No. 09/827,368 (Publication No. 20020144898) and claim 8 of the instant application correspond to proposed Count VIII.

The terms of the application claim 8 corresponding to proposed Count VIII is supported in Applicants' specification as follows:

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| 8. An electrochemical cell comprising: | |
| (a) first and second separators, said first and second separators being electrically conductive, being spaced apart from one another and being generally parallel to one another; | Cell separator plates 712 and 732 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21. "[F]irst flow field 610 is defined generally by the region between membrane 602..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. "With the aid of pressure pad 640, electrical contact between second electrode 606 and member 628 on one side of pressure pad 640, and cell separator plate 632 on the other side of pressure pad 640, is maintained". Also, as shown in Figure 7 the cell separator plates 716 and 732 are spaced apart from one another and are generally parallel to one another. |
| (b) a proton exchange membrane disposed between said first and second separators; | Membrane 702 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21. Membrane 602 is a proton |

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| | exchange membrane as evidenced by the examples provided, see p. 21, l. 18 - p. 23, l. 1 - 10, whereby membrane 702 is also a proton exchange membrane. Also, as shown in Figure 7 membrane 702 is disposed between cell separator plates 712 and 732. |
| (c) an anode, said anode being positioned between said proton exchange membrane and said first separator and being electrically coupled to said proton exchange membrane; | First electrode 704 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 604 "corresponds to the oxygen electrode described above with respect to Figure 1", see p. 20, l. 4 - 5, which is the anode, see p. 1, l. 17, whereby electrode 704 is the anode. First electrode 704 is positioned between membrane 702 and cell separator plate 712, see Figure 7. Electrode 704 is formed on membrane 702, see p. 23, l. 14 - 16, whereby it is electrically coupled thereto. |
| (d) a cathode, said cathode being positioned between said proton exchange membrane and said second separator and being electrically coupled to said proton exchange membrane; | Second electrode 706 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 606 "corresponds to the hydrogen electrode described above with respect to Figure 1", see p. 20, l. 7 - 8, which is the cathode, see p. 1, l. 18, whereby electrode 706 is the cathode. Second electrode 706 has an inner face and an outer face, see Figure 7, with the inner face positioned along the second face of the membrane 702. Second electrode 706 is positioned between membrane 702 and cell separator plate 732, see Figure 7. Electrode 706 is formed on membrane 702, see p. 23, l. 14 - 16, whereby it is electrically coupled thereto. |
| (e) a metal screen, said metal screen being positioned between said anode and | Member 718 in flow field 710 (where "alternate embodiments are also detailed, |

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| said first separator and being electrically coupled to each of said anode and said first separator; | wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Member 618 may be screen packs with the screens "composed of layers of perforated sheets or a woven mesh formed from metal", see (Figure 6) p. 23, 1. 17 - 21. Member 718 is positioned between electrode 704 and cell separator plate 712, see Figure 7. |
| (f) an electrically-conductive, spring-like, porous pad, said electrically-coupled, spring-like, porous pad being positioned between said cathode and said second separator and being electrically coupled to each of said cathode and said second separator; and | Pressure pad 742 "is generally of the same material and configuration as pressure pad 640 described above with respect to Figure 6", see p. 27, l. 6 - 8. "[P]ressure pad 742 serves not only as the means for ensuring the positive contact of the cell components, but also as the primary means of membrane support", see p. 27, l. 8 - 10). "Pressure pad 640 is formed of an integral mixture of electrically conductive material and polymeric material. The electrically conductive material should be electrically conductive, and is preferably inert, in order to prevent degradation of the pad from exposure to the system fluids, and to prevent contamination of the system fluids by the electrically conductive material. Suitable electrically conductive materials include but are not limited to niobium; zirconium; tantalum; titanium; steels; such as stainless steel; nickel; cobalt; carbon; precious metals such as platinum and gold; and mixtures and alloys comprising at least one of the foregoing electrically conductive materials. The polymeric material should be elastomeric, in order to provide intimate and even contact between the flow fields and cell electrodes during compression. Especially where pressure pad 640 is used directly in flow field 620 (as illustrated in Figure 6), the polymeric material should be inert to the environment of the cell to prevent degradation from exposure to the system fluids, and to prevent contamination of the system fluids by the polymeric |

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| | material." See p. 24, l. 5 - 18. "Further, where fluid passes through pressure pad 640, to allow sufficient fluid flow, the original form of the materials and the sintering and/or pressing parameters are selected such that the porosity of pressure pad 640 is between about 10% and 80% void volume, and preferably between about 40% and 50% void volume", see p. 26, l. 7 - 10. Pressure pad 742 is positioned between first electrode 704 and cell separator plate 732, see Figure 7. "With the aid of pressure pad 640, electrical contact between second electrode 606 and member 628 on one side of pressure pad 640, and cell separator plate 632 on the other side of pressure pad 640, is maintained", see p. 26, l. 15 - 18. |
| (g) a pair of cell frames, one of said cell frames being in peripheral contact with said metal screen, the other of said cell frames being in peripheral contact with said electrically-conductive, spring-like, porous pad. | Frames 714 and 724 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, peripherally fluid is contained in the flow fields by the frames 714 and 724, see Figure 7. |

**COUNT IX**

An electrochemical cell comprising:

first and second separators, said first and second separators being electrically conductive, being spaced apart from one another and being generally parallel to one another;

a proton exchange membrane disposed between said first and second separators;

an anode, said anode being positioned between said proton exchange membrane and said first separator and being electrically coupled to said proton exchange membrane;

a cathode, said cathode being positioned between said proton exchange membrane and said second separator and being electrically coupled to said proton exchange membrane;

a metal screen, said metal screen being positioned between said anode and said first separator and being electrically coupled to each of said anode and said first separator;

an electrically-conductive, spring-like, porous pad, said electrically-coupled, spring-like, porous pad being positioned between said cathode and said second separator and being electrically coupled to each of said cathode and said second separator;

a pair of cell frames, one of said cell frames being in peripheral contact with said metal screen, the other of said cell frames being in peripheral contact with said electrically-conductive, spring-like, porous pad; and

wherein said electrically-conductive, spring-like, porous pad includes carbon.

Claims 16 and 17 of U.S. Patent Application Serial No. 09/827,368 (Publication No. 20020144898) and claims 8 and 9 of the instant application substantially correspond to proposed Count IX.

The terms of the application claims 8 and 9 corresponding to proposed Count IX are supported in Applicants' specification as follows:

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| 8. An electrochemical cell comprising:<br>(a) first and second separators, said first and second separators being electrically conductive, being spaced apart from one another and being generally parallel to one another; | Cell separator plates 712 and 732 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21. "[F]irst flow field 610 is defined generally by the region between membrane 602..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. "With the aid of pressure pad 640, electrical contact between second electrode 606 and member |

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| | 628 on one side of pressure pad 640, and cell separator plate 632 on the other side of pressure pad 640, is maintained". Also, as shown in Figure 7 the cell separator plates 716 and 732 are spaced apart from one another and are generally parallel to one another. |
| (b) a proton exchange membrane disposed between said first and second separators; | Membrane 702 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21. Membrane 602 is a proton exchange membrane as evidenced by the examples provided, see p. 21, l. 18 - p. 23, l. 1 - 10, whereby membrane 702 is also a proton exchange membrane. Also, as shown in Figure 7 membrane 702 is disposed between cell separator plates 712 and 732. |
| (c) an anode, said anode being positioned between said proton exchange membrane and said first separator and being electrically coupled to said proton exchange membrane; | First electrode 704 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 604 "corresponds to the oxygen electrode described above with respect to Figure 1", see p. 20, l. 4 - 5, which is the anode, see p. 1, l. 17, whereby electrode 704 is the anode. First electrode 704 is positioned between membrane 702 and cell separator plate 712, see Figure 7. Electrode 704 is formed on membrane 702, see p. 23, l. 14 - 16, whereby it is electrically coupled thereto. |
| (d) a cathode, said cathode being positioned between said proton exchange membrane and said second separator and being electrically coupled to said proton exchange membrane; | Second electrode 706 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 606 "corresponds to the hydrogen electrode described above |

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| | with respect to Figure 1", see p. 20, l. 7 - 8, which is the cathode, see p. 1, l. 18, whereby electrode 706 is the cathode. Second electrode 706 has an inner face and an outer face, see Figure 7, with the inner face positioned along the second face of the membrane 702. Second electrode 706 is positioned between membrane 702 and cell separator plate 732, see Figure 7. Electrode 706 is formed on membrane 702, see p. 23, l. 14 - 16, whereby it is electrically coupled thereto. |
| (e) a metal screen, said metal screen being positioned between said anode and said first separator and being electrically coupled to each of said anode and said first separator; | Member 718 in flow field 710 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Member 618 may be screen packs with the screens "composed of layers of perforated sheets or a woven mesh formed from metal", see (Figure 6) p. 23, l. 17 - 21. Member 718 is positioned between electrode 704 and cell separator plate 712, see Figure 7. |
| (f) an electrically-conductive, spring-like, porous pad, said electrically-coupled, spring-like, porous pad being positioned between said cathode and said second separator and being electrically coupled to each of said cathode and said second separator; and | Pressure pad 742 "is generally of the same material and configuration as pressure pad 640 described above with respect to Figure 6", see p. 27, l. 6 - 8. "[P]ressure pad 742 serves not only as the means for ensuring the positive contact of the cell components, but also as the primary means of membrane support", see p. 27, l. 8 - 10). "Pressure pad 640 is formed of an integral mixture of electrically conductive material and polymeric material. The electrically conductive material should be electrically conductive, and is preferably inert, in order to prevent degradation of the pad from exposure to the system fluids, and to prevent contamination of the system fluids by the electrically conductive material. Suitable electrically conductive materials include but are not limited to niobium; zirconium; tantalum; titanium; steels; such |

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| | as stainless steel; nickel; cobalt; carbon; precious metals such as platinum and gold; and mixtures and alloys comprising at least one of the foregoing electrically conductive materials. The polymeric material should be elastomeric, in order to provide intimate and even contact between the flow fields and cell electrodes during compression. Especially where pressure pad 640 is used directly in flow field 620 (as illustrated in Figure 6), the polymeric material should be inert to the environment of the cell to prevent degradation from exposure to the system fluids, and to prevent contamination of the system fluids by the polymeric material." See p. 24, l. 5 - 18. "Further, where fluid passes through pressure pad 640, to allow sufficient fluid flow, the original form of the materials and the sintering and/or pressing parameters are selected such that the porosity of pressure pad 640 is between about 10% and 80% void volume, and preferably between about 40% and 50% void volume", see p. 26, l. 7 - 10. Pressure pad 742 is positioned between first electrode 704 and cell separator plate 732, see Figure 7. "With the aid of pressure pad 640, electrical contact between second electrode 606 and member 628 on one side of pressure pad 640, and cell separator plate 632 on the other side of pressure pad 640, is maintained", see p. 26, l. 15 - 18. |
| (g) a pair of cell frames, one of said cell frames being in peripheral contact with said metal screen, the other of said cell frames being in peripheral contact with said electrically-conductive, spring-like, porous pad. | Frames 714 and 724 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, peripherally |

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| | fluid is contained in the flow fields by the frames 714 and 724, see Figure 7. |
| 9. The electrochemical cell as claimed in claim 8 wherein said electrically-conductive, spring-like, porous pad includes carbon. | Pressure pad 742 "is generally of the same material and configuration as pressure pad 640 described above with respect to Figure 6", see p. 27, l. 6 - 8. "Pressure pad 640 is formed of an integral mixture of electrically conductive material... Suitable electrically conductive materials include ... carbon ", see p. 24, l. 5 - 11. |

**COUNT X**

An electrochemical cell comprising:

first and second separators, said first and second separators being electrically conductive, being spaced apart from one another and being generally parallel to one another;

a proton exchange membrane disposed between said first and second separators;

an anode, said anode being positioned between said proton exchange membrane and said first separator and being electrically coupled to said proton exchange membrane;

a cathode, said cathode being positioned between said proton exchange membrane and said second separator and being electrically coupled to said proton exchange membrane;

a metal screen, said metal screen being positioned between said anode and said first separator and being electrically coupled to each of said anode and said first separator;

an electrically-conductive, spring-like, porous pad, said electrically-coupled, spring-like, porous pad being positioned between said cathode and said second separator and being electrically coupled to each of said cathode and said second separator;

a pair of cell frames, one of said cell frames being in peripheral contact with said metal screen, the other of said cell frames being in peripheral contact with said electrically-conductive, spring-like, porous pad; and

wherein said electrically-conductive, spring-like, porous pad comprises carbon and a polymeric or elastomeric material.

Claims 16 and 21 of U.S. Patent Application Serial No. 09/827,368 (Publication No. 20020144898) and claims 8 and 10 of the instant application substantially correspond to proposed Count X.

The terms of the application claims 8 and 10 corresponding to proposed Count X are supported in Applicants' specification as follows:

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| 8. An electrochemical cell comprising: | |
| (a) first and second separators, said first and second separators being electrically conductive, being spaced apart from one another and being generally parallel to one another; | Cell separator plates 712 and 732 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21. "[F]irst flow field 610 is defined generally by the region between membrane 602..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. "With the aid of pressure pad 640, electrical contact between second electrode 606 and member 628 on one side of pressure pad 640, and cell separator plate 632 on the other side of pressure pad 640, is maintained". Also, as shown in Figure 7 the cell separator plates 716 and 732 are spaced apart from one another and are generally parallel to one another. |
| (b) a proton exchange membrane disposed between said first and second separators; | Membrane 702 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21. Membrane 602 is a proton exchange membrane as evidenced by the examples provided, see p. 21, l. 18 - p. 23, l. 1 - 10, whereby membrane 702 is also a proton exchange membrane. Also, as shown in Figure 7 membrane 702 is |

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| | disposed between cell separator plates 712 and 732. |
| (c) an anode, said anode being positioned between said proton exchange membrane and said first separator and being electrically coupled to said proton exchange membrane; | First electrode 704 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 604 "corresponds to the oxygen electrode described above with respect to Figure 1", see p. 20, l. 4 - 5, which is the anode, see p. 1, l. 17, whereby electrode 704 is the anode. First electrode 704 is positioned between membrane 702 and cell separator plate 712, see Figure 7. Electrode 704 is formed on membrane 702, see p. 23, l. 14 - 16, whereby it is electrically coupled thereto. |
| (d) a cathode, said cathode being positioned between said proton exchange membrane and said second separator and being electrically coupled to said proton exchange membrane; | Second electrode 706 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Electrode 606 "corresponds to the hydrogen electrode described above with respect to Figure 1", see p. 20, l. 7 - 8, which is the cathode, see p. 1, l. 18, whereby electrode 706 is the cathode. Second electrode 706 has an inner face and an outer face, see Figure 7, with the inner face positioned along the second face of the membrane 702. Second electrode 706 is positioned between membrane 702 and cell separator plate 732, see Figure 7. Electrode 706 is formed on membrane 702, see p. 23, l. 14 - 16, whereby it is electrically coupled thereto. |
| (e) a metal screen, said metal screen being positioned between said anode and said first separator and being electrically coupled to each of said anode and said first separator; | Member 718 in flow field 710 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). Member 618 may be screen |

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| | packs with the screens "composed of layers of perforated sheets or a woven mesh formed from metal", see (Figure 6) p. 23, l. 17 - 21. Member 718 is positioned between electrode 704 and cell separator plate 712, see Figure 7. |
| (f) an electrically-conductive, spring-like, porous pad, said electrically-coupled, spring-like, porous pad being positioned between said cathode and said second separator and being electrically coupled to each of said cathode and said second separator; and | Pressure pad 742 "is generally of the same material and configuration as pressure pad 640 described above with respect to Figure 6", see p. 27, l. 6 - 8. "[P]ressure pad 742 serves not only as the means for ensuring the positive contact of the cell components, but also as the primary means of membrane support", see p. 27, l. 8 - 10). "Pressure pad 640 is formed of an integral mixture of electrically conductive material and polymeric material. The electrically conductive material should be electrically conductive, and is preferably inert, in order to prevent degradation of the pad from exposure to the system fluids, and to prevent contamination of the system fluids by the electrically conductive material. Suitable electrically conductive materials include but are not limited to niobium; zirconium; tantalum; titanium; steels; such as stainless steel; nickel; cobalt; carbon; precious metals such as platinum and gold; and mixtures and alloys comprising at least one of the foregoing electrically conductive materials. The polymeric material should be elastomeric, in order to provide intimate and even contact between the flow fields and cell electrodes during compression. Especially where pressure pad 640 is used directly in flow field 620 (as illustrated in Figure 6), the polymeric material should be inert to the environment of the cell to prevent degradation from exposure to the system fluids, and to prevent contamination of the system fluids by the polymeric material." See p. 24, l. 5 - 18. "Further, where fluid passes through pressure pad 640, to allow sufficient fluid flow, the original form of the materials and the sintering and/or pressing parameters are |

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| | selected such that the porosity of pressure pad 640 is between about 10% and 80% void volume, and preferably between about 40% and 50% void volume", see p. 26, l. 7 - 10. Pressure pad 742 is positioned between first electrode 704 and cell separator plate 732, see Figure 7. "With the aid of pressure pad 640, electrical contact between second electrode 606 and member 628 on one side of pressure pad 640, and cell separator plate 632 on the other side of pressure pad 640, is maintained", see p. 26, l. 15 - 18. |
| (g) a pair of cell frames, one of said cell frames being in peripheral contact with said metal screen, the other of said cell frames being in peripheral contact with said electrically-conductive, spring-like, porous pad. | Frames 714 and 724 (where "alternate embodiments are also detailed, wherein similar elements are numbered in increments of one-hundred as compared to similar elements in the embodiments described with reference to Figure 6", p. 26, l. 19 - 21). "[F]irst flow field 610 is defined generally by the region between membrane 602 ..., a cell separator plate 612, and a frame 614", see p. 20, l. 11 - 13, "second flow field 620 is defined generally by the region between membrane 602..., a cell separator plate 632, and a frame 624," see p. 20, l. 16 - 18. Whereby, peripherally fluid is contained in the flow fields by the frames 714 and 724, see Figure 7. |
| 10. The electrochemical cell stack as claimed in claim 8 wherein said electrically-conductive, spring-like, porous pad comprises carbon and a polymeric or elastomeric material. | Pressure pad 742 "is generally of the same material and configuration as pressure pad 640 described above with respect to Figure 6", see p. 27, l. 6 - 8. "[P]ressure pad 742 serves not only as the means for ensuring the positive contact of the cell components, but also as the primary means of membrane support", see p. 27, l. 8 - 10). "Pressure pad 640 is formed of an integral mixture of electrically conductive material and polymeric material. The electrically conductive material should be electrically conductive, and is preferably inert, in order to prevent degradation of the pad from exposure to the system fluids, and to prevent contamination of the system fluids |

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| | by the electrically conductive material. Suitable electrically conductive materials include but are not limited to niobium; zirconium; tantalum; titanium; steels; such as stainless steel; nickel; cobalt; carbon; precious metals such as platinum and gold; and mixtures and alloys comprising at least one of the foregoing electrically conductive materials. The polymeric material should be elastomeric, in order to provide intimate and even contact between the flow fields and cell electrodes during compression. Especially where pressure pad 640 is used directly in flow field 620 (as illustrated in Figure 6), the polymeric material should be inert to the environment of the cell to prevent degradation from exposure to the system fluids, and to prevent contamination of the system fluids by the polymeric material." See p. 24, l. 5 - 18. "Further, where fluid passes through pressure pad 640, to allow sufficient fluid flow, the original form of the materials and the sintering and/or pressing parameters are selected such that the porosity of pressure pad 640 is between about 10% and 80% void volume, and preferably between about 40% and 50% void volume", see p. 26, l. 7 - 10. Pressure pad 742 is positioned between first electrode 704 and cell separator plate 732, see Figure 7. |

This application has not yet had references cited by the U.S. Patent and Trademark Office, as it is being filed concurrently with this request. However, this application is a continuation of U.S. Patent Application Serial No. 09/965,680, which has had references cited by the U.S. Patent and Trademark Office. These references and reference submitted concurrently with this application have been considered in view of the presented claims 1 - 10. Claims 1 - 10 are believed to be patentable over the aforementioned references as an electrochemical cell having an electrically-conductive pad at the cathode electrode of the cell, configured as recited in said claims, is not taught nor suggested in said references.

Applicants' effective filing date (i.e., September 27, 2000) is earlier than the effective filing date of U.S. Patent Application Serial No. 09/827,368 (i.e., April 5, 2001). This application is a continuation of U.S. Patent Application Serial No. 09/965,680 filed September 27, 2001, which claims priority to U.S. Patent Application Serial No. 60/235,757 filed September 27, 2000.

If there are any additional charges with respect to this Request for Interference or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicants' attorney.

Respectfully submitted,

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